CLAIMS

1. A method of controlling a conductivity of a Ga_2O_3 system single crystal, characterized in that:

a desired resistivity is obtained by adding a predetermined dopant to the Ga_2O_3 system single crystal.

2. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim **1**, characterized in that:

the predetermined dopant is a group IV element which decreases a resistance of the Ga_2O_3 system single crystal.

3. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim **2**, characterized in that:

the group IV element is Si, Hf, Ge, Sn, Ti or Zr.

4. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim **2**, characterized in that:

a value of 2.0×10^{-3} to 8.0×10^{2} Ωcm is obtained as the desired resistivity by adding a predetermined amount of group IV element.

5. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim 4, characterized in that:

a carrier concentration of the Ga_2O_3 system single crystal is controlled to fall within a range of 5.5×10^{15} to $2.0 \times 10^{19}/cm^3$ as a range of the desired resistivity.

6. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim 1, characterized in that:

the predetermined dopant is a group II element which increases a resistance of the Ga_2O_3 system single crystal.

7. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim 6, characterized in that:

the group II element is Mg, Be or Zn.

8. A method of controlling a conductivity of a Ga_2O_3 system single crystal according to claim 6, characterized in that:

1×10^3 Ωcm or more is obtained as the desired resistivity by adding a predetermined amount of group II

element.